Abstract

The invention is directed toward a device wherein out-of-kilter communications paths are reassigned in a manner that is more efficient than the art. Efficiency is improved because the reassignment of out-of-kilter communications paths permits reassignments of in-kilter communications paths in order to most efficiently accommodate the reassignment of the out-of-kilter communications paths. More specifically, a device made in accordance with the invention would comprise means for receiving a set of out-of-kilter communications paths and a set of in-kilter communications paths and means for permitting changes to both the set of out-of-kilter communications paths and the set of in-kilter communications paths. The changes are specified as an ordered sequence of reassignments. This sequence satisfies the properties of graceful reassignment solutions. A corresponding method for finding a graceful reassignment solution is disclosed. The method constructs layered search trees that identify subsequences that will be part of the ordered sequence of reassignments. The search trees take advantage of heuristic rules and proven propositions to cut significantly the number of combinations of possible subsequences that need to be examined.

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